

# **Implementing a Broad-based Bay-Delta Diversion Fee**

A Report to the CALFED Bay-Delta Program

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A broad-based Bay-Delta diversion fee was discussed in the CALFED Implementation Plan, Technical Appendix to the Programmatic EIS/EIR, published in draft in June 1999 and in final in July 2000 (see Section 5.6 of Chapter 5, Financing Plan). Those documents provided some rough estimates of the amount of revenues (ignoring price effects) that might be expected from such a fee (see Table 5.5) and a brief overview of the considerations that would enter into how to best implement such fees.

This paper further explores both of these topics. It provides more background and documentation of the water supply quantities used in the revenue estimates, as well as more discussion of implementation considerations.

This paper continues to use the fees imposed by the CVPIA as a model, with the concept that similar fees be imposed on other water users in California. In particular, under this concept, a CALFED broad-based Bay-Delta Diversion fee would not be imposed on those Central Valley Project (CVP) users already paying \$6 per acre-foot for irrigation water and \$12 for municipal and industrial (M&I) water, indexed forward to current dollar levels. In fact, those users would receive credit for past payments. The existing CVPIA charges are discussed in Section 5.6 of Chapter 5.

There are several broad categories of water rights (and diversions) in California. These categories are reflected by the rows of Table 5.5 and, in a more expanded form, by the rows in Table A of this report. The discussion in this paper is organized by those categories - focussing on the historical and institutional background for each type of water right, an indication of whether the water deliveries in these general categories are currently measured and if payments are made for such deliveries, the quantities of water rights or deliveries in each category, and the magnitude of individual rights within each category. These factors would influence the selection of an implementation method for collecting a fee for each category of water rights and the groundwork that would have to be laid to do so.

It would be easiest to collect fees on water users with the following characteristics: (a) current deliveries to the water rights holder are measured, and (b) charges are made for such deliveries and collected by a state or federal agency. Examples of water users with these characteristics are State Water Project (SWP) contractors and CVP contractors (the fee would apply to those deliveries not currently subject to the CVPIA charges). At the other end of the spectrum are the many water rights holders in California that have non-CVP, non-SWP water rights. Within this category, water rights holders would range from very large water districts to individual water users. Districts would likely maintain delivery records, send bills to their customers, and maintain records of historical use. However, at the other end of the spectrum would be water rights holders, some of them quite small, for which water deliveries may not be measured and for which no water charges are currently collected. Even among larger districts, records may not be complete or entirely reliable. Clearly, where charging a Bay-Delta fee required new record-keeping by the state, it is more cost-effective to do so for larger districts. The smaller the district, the less revenue per account, would be collected.

This discussion suggests some immediate conclusions. (1) **Consideration needs to be given how best to structure such a fee, particularly to create incentives for keeping accurate records and for assuring compliance.** (2) **Based on cost-effectiveness considerations, a decision could be made to exempt certain small water rights holders.** (3) **These deliberations need to be undertaken over the next three years.** (4) **It may be important to lay the groundwork for such a fee (such as the recordkeeping needed) well before a fee is actually implemented.**

### **Categories of water rights**

California has a mixture of both appropriative and riparian water rights. Appropriative rights are obtained by putting water to a beneficial use. These rights may involve storing or diverting water, possibly far from its source, and then using it for agricultural or municipal and industrial use, for example. Such uses must continue for the appropriative right to remain valid - an extended period of non-use (5 years or more) can lead to forfeiture of the right. By contrast, riparian water uses attach to land that is riparian (contiguous to a streamcourse or water body). Riparian rights cannot be lost through non-use, but neither can water be diverted from the riparian land for use elsewhere. Appropriative water rights carry a priority date based on when the beneficial use was initiated. Junior rights with later priority dates are the first to be curtailed during times of low flow. Riparian water rights carry no priority date and can be considered senior to all appropriative rights.

**Caveats.** The tabulations of water rights (or entitlements) and water deliveries that follow were based on the most current and detailed information that could be obtained when the information was being compiled. Note, however, that with both water rights and contract delivery information, contractor names can change, and contracts can be amended as to quantity or in other ways. Such changes can make it difficult to reconcile lists of contractors or water deliveries from different sources or from different years. In other cases, water contractors or delivery information may be omitted from some agency tabulations, or agency summary statistics may be inconsistent. In those cases where water rights holders are required to file water delivery information with a state agency, such as the SWRCB, the information may be of varying quality and the agency may not have reconciled it with data from other sources. Contract numbers and other designations are included in several the following tables to facilitate future updating or reconciling with other sources.

**Water users paying CVPIA fees.** Not covered in these tabulations are water deliveries that are currently subject to the CVPIA-imposed "mitigation and restoration payments" fees on a continuing basis - that is the fees on contractual deliveries (as contrasted with fees on water transfers). As noted above, the existing CVPIA charges are discussed in Section 5.6 of Chapter 5.

Section 3407(d)(2)(A) of the CVPIA indicates that mitigation and restoration payments

"shall be allocated so as not to exceed \$6 per acre-foot (October 1992 price levels) for agricultural water sold and delivered by the Central Valley Project, and \$12 per acre-foot (October 1992 price levels) for municipal and industrial water sold and delivered by the Central Valley Project [emphasis added].

The Bureau of Reclamation has interpreted the underlined wording to mean that water provided by the Bureau as "base supply" under water rights settlement and exchange contracts is not subject to these CVPIA fees because even though such water is delivered by the Bureau, there is no charge for it.

**Water rights settlements.** When any large storage project is constructed in a river basin, the builders face a dilemma. On the one hand, the storage project will be planned to impound water flows over and above the flows that were previously utilized by existing water rights holders. Hence, the facility has the potential to increase water availability for diversions. Typically, this additional water may result from the storing of flows occurring during periods of high runoff that either could not previously be successfully diverted or impounded by individual water rights holders or flows that were surplus to their needs during the high-flow periods. Subsequent to construction, the impounded flows can be released upon a schedule that allows their utilization to either augment the supplies of existing water rights holders or for new water users or uses.

On the other hand, a new storage facility also has the potential to interfere with the water rights that were in existence prior to the storage facility being constructed. The new facility will likely alter the flow of the river and the storage potential of any facilities that existed downstream of the new facility. Naturally, the existing water rights holders would object to the construction of a new facility if their water rights were interfered with, unless they were compensated in some way. State water codes provide the vehicle for registering these objections.

The usual means for handling this situation is that the entities constructing the new storage facility (which could be a state or federal agency, a water district, or a group of the existing water rights holders themselves), will provide some guarantee to provide existing water rights holders with schedules of water deliveries that assures them the amounts of water they would have received before the storage facility was constructed. Of course, one cannot know with certainty exactly what future flows would have been absent the new storage facility, but an attempt can be made, based on prior water delivery records, other records of past use (acreage irrigated), the hydrology of the stream, runoff or flow measurements, and water modelling. But, whatever the means, the existing water rights holder must be in essential agreement that they will not be worse off, in water delivery terms, after the new facility is constructed. At least a sufficient number of existing water rights holders must agree that the remaining rights holders cannot successfully challenge the construction of the new facility in court. In this "settlement" process, the owners of the new facility may even provide guaranteed deliveries that are more than sufficient to match pre-

facility deliveries, just to avoid legal challenge. They may error on the side of providing "liberal" guarantees of water.

These water rights settlements can vary somewhat. (a) The existing water rights holders could simply agree to relinquish their prior water rights in exchange for promised deliveries from the new storage facility - deliveries guaranteed by contract. This is not the usual practice, however. Provided the existing water rights holders have higher priority rights than the new storage facility or where their rights are more secure in other ways, they will prefer to retain their prior rights. (b) Therefore, an alternative is for the prior rights holders to retain, rather than relinquish their rights, but accept deliveries from the new facility as the means of fulfilling their water rights. In the settlement, the existing water rights agree not to exercise their rights provided they receive the water deliveries set forth in the settlement contract.

The deliveries guaranteed by the settlement contract are typically provided without any charge for the "settlement" quantities of water - after all, the existing water rights holders are trying to protect prior water rights. However, if the settlement quantities were liberalized or if there is the expectation that the amounts specified will be delivered more frequently than in the absence of the new facility (that the storage project will be able to deliver water in "dry years" that, absent its existence, would have provided no water), then the settlement contracts would provide the prior rights holders with some additional benefit, compared with the pre-project conditions - whether or not they must pay for such a benefit.

Finally, at least some of the water rights holders may want to contract for quantities of water from the new storage facility that are clearly in excess of their prior use (e.g., water that can be provided from the excess flows captured by the new storage facility). Typically, this water would be charged for by the owner of the new facility. This additional water is termed "project water," or "supplemental water," as contrasted with "settlement water" or "water rights" water.

## **1. CVP water rights settlement contracts on the Sacramento River**

Shasta Dam was completed by the Bureau of Reclamation in 1944. Subsequently, it became clear that litigation was likely with many water rights holders in the Sacramento River Valley who believed their water rights were being adversely impacted. To avoid litigation, representatives of the water users, the State, and the Federal Government initiated negotiations in 1952. A major study was initiated in 1956 to determine water availability and water rights and uses in this area. Subsequently, "settlement" contracts were written with a large number of water rights holders - numbering over 200 contractors.

Water deliveries under such settlement contracts are divided into two schedules - "base supply" and "project supply." The base supply water is the "settlement" quantity agreed upon between the Bureau of Reclamation and prior water rights holders. As noted in the discussion above, expectations are that some of these quantities may have been generous,

but were negotiated to allow the project to go forward. There is no charge for this water. The "project water" is the amount contracted for delivery from the additional water made available by Bureau of Reclamation storage facilities. Other terms sometimes applied to these two categories are "water rights water" (for "base supply") and "supplemental supply" (for "project supply"). Each contractor's full contractual supply would be comprised of the sum of the base supply and the project supply in the contract. Even though the entire contract is sometimes referred to as a "water rights settlement contract," it is important to note that only part of the water (the base supply) is water rights settlement water.

**Settlement provisions.** Typical among the contract terms in the Sacramento River settlement contracts are the following, which protect the prior rights of such contractors. "In the event this contract terminates, the rights of the parties thereafter to divert and use water shall exist as if this contract had not been entered into." Contractors are responsible for maintaining their original water rights. In order to assure beneficial use of water under those prior rights, "it is further agreed that the Contractors at all times will first use water to the use of which they are entitled by virtue of their own water rights." Note that in any tabulation of water rights, the water rights of settlement contractors at least partially overlap those of the Bureau of Reclamation. In the settlement contracts, the prior rights holders are agreeing not to exercise their rights against the Bureau of Reclamation, provided the Bureau of Reclamation abides by the delivery terms of the settlement contracts.

The following sections first review (A) "base supply" entitlements provided by these contracts and then (B) historic deliveries under the base supply schedules. The "base supply" schedule can be regarded as the contractor's maximum entitlement, provided water is available. Actual deliveries can be well below these maximum amounts since they depend upon water availability conditions. Note that the term "water rights" is used loosely in this discussion, since, in this context, the so-called "right" is the maximum contractual entitlement in a contract between the Bureau of Reclamation and the settlement contractor. The Bureau of Reclamation is the entity holding the water right under which base supply is provided. However, as discussed above, the settlement contractors also typically retained their original water rights under provisions of the settlement contracts. If such original rights were ever quantified or adjudicated by the state, they might differ from the amount of "base water supply" in the settlement contracts between the Bureau of Reclamation and the contractor. This difference and the existence of these partially overlapping water rights have implications for just how any legislation imposing a Bay-Delta diversion fee would have to be worded, as discussed below.

**A. Maximum contractual entitlements for base supply.** Tables A and B indicate that, measured in terms of maximum contractual entitlement, there is a total of some 1,830,000 acre-feet of base supply in the Sacramento River settlement contracts. This does not mean that the full amount would be delivered each year, since the amount delivered also depends upon water availability conditions (actual deliveries are tabulated in section B, below). The vast majority of these rights are held by agricultural water users: Table B indicates that some 30,000 acre-feet of base supply entitlements are held by M&I contractors and about

1,800,000 acre-feet by agricultural contractors. In Bureau of Reclamation contract terms, these contractual entitlements can be further subdivided or categorized as settlement contracts (a) with water districts, (b) with individuals or corporate entities whose contracts use the so-called "long form" contract, and (c) with individuals or corporate entities using "short form" contracts. Note that the contractual entitlements of the short-form contractors comprise only 1.1% of the base supply (see Table B). For convenience, Table B and several others also include the "project supply" within each contract or contract category. Note that, consistent with the discussion above, such project water is not water to which a Bay-Delta diversion fee would be applied since CVPIA charges already apply.

Several additional tables provide details regarding the base supply in each of the categories (lines) used in Table B: agricultural water districts, long-form contractors, short-form contractors, and M&I contractors.

**A.1. Agricultural water districts.** Table C lists the base supply held by some 17 agricultural water districts with Sacramento settlement contracts. These districts are primarily agricultural and the entire base supply amounts are treated as agricultural water. The magnitude of the base supply in these district contracts ranges from the very large contractual entitlements held by the Glenn-Colusa Irrigation District (720,000 acre-feet), Reclamation District 108 (199,000 acre-feet), the Sutter Mutual Water Company (172,900 acre-feet), and the Anderson Cottonwood Irrigation District (165,000 acre-feet) to base supply entitlements in the 10,000's of acre-feet down to the 410-acre-foot entitlement held by the Swinford Tract Irrigation Company.

**A.2. Individuals - long form.** Table D lists the so-called "long-form" settlement contracts for "individuals," as opposed to districts. This category includes individuals, family farms, and corporate farms. The settlement portion of these contracts (the base supply) ranges from 50,190 acre-feet (Conaway Farms) down to 370 acre-feet (the Wilson Ranch Partnership and Wm. Lockett), with a number of contracts falling between 1,000 acre-feet and 4,000 acre-feet.

**A.3. Individuals - short form.** Table E lists the "short-form" settlement contracts. With the exception of the 1,750 acre-foot contract for the Richter Bros., all of these contracts are for less than 1,000 acre-feet. There are several contracts with less than 100 acre-feet of base supply, ranging down to values as low as 2 acre-feet. As noted above, the contractual entitlements for short-form contractors comprises only 1.1% of the total.

**A.4. Municipal and industrial contractors.** Table F shows that there are some six M&I contractors with base supply settlement water on the Sacramento River, including the cities of Redding and West Sacramento. The water rights for these two entities are 15,385 acre-feet and 13,920 acre-feet, respectively, but the M&I contractual rights for the other entities range down to 50 acre-feet. Some of the entities in this table are categorized by the Bureau as long-form contractors (see the latter portion of Table E), but were included in this

table for the purpose of grouping the M&I base water supply entitlements into a single category.

**B. Water deliveries for base supply.** The following discussion summarizes the amounts of actual deliveries received by contractors in the categories discussed above. The water deliveries in table A indicate that for the years 1985 to 1996, the average amount of actual deliveries of base supply in the Sacramento River settlement contracts is about 1,345,000 acre-feet, an amount considerably lower than the full contractual entitlement of 1,830,000 acre-feet. This is as expected because the contractual conditions for base supply depend upon water availability conditions in the Sacramento River.

Note however, that the summary delivery value included in Table A covers only the major contractors - in fact, as a conservative estimate, only the major agricultural contractors (the group for which delivery records were available). Since the actual deliveries to M&I contractors were not available and their full entitlements are a relatively small portion of total Sacramento River settlement contracts, the base supply entitlements were utilized for the M&I delivery entry in Table A, a value which would overestimate the M&I deliveries to some extent. Then, the M&I deliveries are subtracted from the total to give the agricultural deliveries. Since, as shown in Table B, the M&I entitlements comprise only 2% of the base supply for the Sacramento River settlement contracts and the short-form agricultural contractors comprise only about 1.1% of base supply, the values shown provide a reasonable, but conservative estimate of the overall deliveries for this contractor group.

*Revision.* The revised Table A utilizes a somewhat different approach to arrive at a total of 1,375,385 acre-feet for the average water deliveries in this category. The total value of the agricultural districts and long-form contractors is used as the total for agricultural deliveries. The M&I contractual entitlement is added to this amount to obtain the total for this contractor group. While the M&I amount may be an overestimate, it is offset by the fact that the short-form contractors are omitted from the total.

Table G provides a summary of the agricultural deliveries by year (excluding the short-form contractors). Table G-2 provides the deliveries by year for the contractors covered by Table G.

**2. Delta Mendota Canal settlement contracts.** There are also CVP settlement contracts along the Delta Mendota Canal amounting to some 40,813 acre-feet in base supply entitlements (see Table H), a quantity much smaller than the base supply in the Sacramento River settlement contracts. These contracts are similar in concept to the Sacramento River settlement contracts: the contracts contain both a base supply and, in most cases, an additional project supply.

The contracts listed in Table H show that the contractual entitlements for base supply range from a high of 20,200 acre-feet for the Tranquility Irrigation District down to 93 acre-

feet for Mardella Hughes. Note that the base supply of some of these contracts is used for fish and wildlife purposes, and those quantities are excluded from the total. Regarding a Bay-Delta Diversion Fee, a decision would have to be made regarding whether it would apply to all contracts or whether contracts providing refuge water supplies or providing water exclusively for purpose of wildlife management would be excluded.

Table I lists the annual deliveries for the districts listed in Table H, with the average for this group being carried to Table A. The Exchange Contract is not included in this category, but provides one data source for deliveries under the Exchange Contract, which is discussed below.

**3. West San Joaquin settlement contracts.** There is also a small quantity of settlement contracts listed by the Bureau as "West San Joaquin settlement contracts" - amounting to 9,500 acre-feet of base supply (see Table J). One of the contracts also contains an additional project supply.

The base supply entitlements range from two contracts with rights of 3,500 acre-feet (Grasslands Water District and the City of Avenal) down to 250 acre-feet (Los Banos Gravel Company). One of the contracts is designated for recreational use. This latter contract is included in the total, under the assumption that a diversion fee would be applied to contracts for recreational use of water. Table J partitions the remainder of the contracts into agricultural and municipal and industrial use.

Because the total quantity of base supply is small, the total was used as a surrogate for actual deliveries in the summary table, Table A.

**Alternative methods to impose a fee.** The following discussion applies to all of the above settlement contracts - those for the Sacramento River, the Delta Mendota Canal and the West San Joaquin.

State legislation could be drafted to impose a Bay-Delta Diversion Fee on all diversions under all Central Valley water rights (excepting for water on which a Restoration Fund charge is already levied by the CVPIA). This would make the fee payable on the water rights settlement portion (the base supply) of these CVP contracts. The language would have to be drafted to make sure that the fee applied to the water delivered under the contractual entitlement for base supply and not just the quantity of water delivered under the original water right held by the settlement contractor (or to apply to the larger of the two quantities, which barring some future water rights determination to the contrary, should be the quantity delivered under the contractual entitlement to base supply). As noted above, the original water right and the contractual settlement may well differ as to quantity. Therefore, a fee imposed only on water delivered under the original water right would leave no fee applying to any additional water delivered under a contractual entitlement to base supply. Furthermore, since in general the original water rights have not been quantified, it would take some time to sort out these quantities (but with no substantial public benefit).

Another alternative would be to impose such a fee through federal legislation, by either amending the CVPIA or passing separate legislation. For example, simply changing the phrase "sold and delivered" to "delivered" in Section 3407(d)(2)(A) of the CVPIA, cited above, could be one means of accomplishing this change. This language could be clarified by adding that "the same mitigation and restoration payments will be applied to the base water supply delivered under CVP settlement contracts and water delivered under the Exchange Contract" (the Exchange Contract is discussed below).

The Bureau of Reclamation currently measures and keeps records on the amount of water, both base supply and project supply, diverted from the Sacramento River under these contracts. These measurements would provide a ready means of implementing such a diversion fee. Since the Bureau categorizes the contracts as irrigation and M&I, a fee that imposed differential rates for these two uses could be accommodated. The actual collections could be made by the Bureau of Reclamation for passing on to CALFED or such fees could be paid directly to a state agency based on the Bureau records of delivery. It would be the responsibility of the state agency to reconcile the payments received with the delivery records provided by the Bureau.

#### **4. The exchange contractors**

The Bureau of Reclamation constructed Friant Dam, which impounds the waters in Millerton Lake, on the upper portion of the San Joaquin River. However, unlike Shasta Reservoir in the Sacramento River basin, the purpose of Friant Dam was not designed primarily to enhance the water reliability of water rights holders downstream. Rather, Friant Dam was designed to allow the irrigation of lands north and south of Millerton Lake via the Madera and Friant-Kern canals. However, doing so would severely affect the water flows in the lower San Joaquin River. Part of the plan, therefore, was to provide replacement flows to those water rights holders from a completely separate source - from the Delta Mendota Canal - a facility to be constructed by the CVP from the south end of the Delta to a terminus near Mendota.

The water districts in the lower San Joaquin River affected by this arrangement were the Central California Irrigation District, the Columbia Canal Company, the Firebaugh Canal Company, and the San Luis Canal Company. Collectively, these are known as the "exchange contractors." Note that there is only one contract which covers all four contractors.

Their contractual arrangement differed somewhat from that of the water rights settlement contracts on the Sacramento River and elsewhere. Although there may be an argument the water that they receive under this exchange is more reliable than the San Joaquin flows, the basic concept was that they were being provided a replacement or substitute supply. There is no "project water" supply designated in their contracts. Since the water being provided is from a different source, the contract is designated as an "exchange" contract, rather than a settlement contract. Similar to the settlement contracts, these

contractors did not relinquish their original water rights in this exchange. Under Article 4(c) of the Exchange Contract, if the United States is permanently unable to deliver the substitute water under the contract, then the contractors may receive water under their original rights to the San Joaquin River. No payment is made to the Bureau of Reclamation for the exchange water.

The total water right in the exchange contract is 840,000 acre-feet of water (see Table K). As noted above, there is no provision for additional "project" water in this contract. Table K indicates that the water deliveries under this contract averaged 640,664 acre-feet over the 1985 to 1996 period, according to data provided in CVP ratesetting documents. This is the value used in Table 5.5 and Table A. Note, however, that different Bureau of Reclamation sources provide different amounts. The CVP delivery data provided in the last column of Table K (corresponding to those in the first row of Table I) provide a somewhat higher value - an average of 783,775 acre-feet over the same period. This difference, which exceeds 140,000 acre-feet annually, appears to be large enough that it cannot be accounted for simply by the annual amounts being compiled using a different starting month.

The data from CVP ratesetting documents, the source relied on for the summary tabulation, indicate that 52,480 acre-feet of average annual deliveries have been used for M&I use and 588,184 acre-feet for agricultural deliveries for the time period covered by the table. This division into M&I use and agricultural use is not specified in the contract. Therefore, in order to provide a conservative estimate of revenues, the M&I deliveries were not entered as a separate item in Table A.

*Revision.* The deliveries are partitioned into agricultural and M&I deliveries, based on these historical averages, in the Revised Table A.

No breakout in deliveries by district is provided by the contract or in the Bureau of Reclamation delivery records.

Since the Exchange Contractors do not pay for CVP water, consistent with the Bureau's interpretation of Section 3407(d)(2)(A), they do not currently pay charges into the Restoration Fund. Nevertheless, the Bureau of Reclamation does measure water delivered to these contractors from the DMC, so a means of levying a Bay-Delta fee is in place. Also, since the Bureau categorizes deliveries as irrigation and M&I, a fee that imposed differential rates for these two uses could be accommodated.

As with the Bureau of Reclamation settlement contracts, a Bay-Delta Diversion Fee could presumably be implemented either through state or federal legislation. The same general considerations as to language would apply as for the Sacramento River settlement contracts (see above).